

SSAB Domex 420MC Plus

General Product Description

SSAB Domex 420MC Plus is a HSLA steel with enhanced toughness and local formability properties. The new generation HSLA steels are produced with carefully controlled production parameters resulting in a finer microstructure and low variation in the mechanical properties. Fine microstructure will significantly improve the cut edge quality, lead to improved local formability while still retaining an excellent global formability and improve the toughness.

Dimension Range

SSAB Domex 420MC Plus is available in thicknesses of 3.00-10.00 mm and widths up to 1860 mm as coils, slit coils and as cut to length in lengths up to 16 meters.

Mechanical Properties

Thickness (mm)	Yield strength R _{eH} (min MPa)	Tensile strength R _m (MPa)	Elongation A ₈₀ ¹⁾ (min %)	Elongation A ₅ ²⁾ (min %)	Min. inner bending radius for a 90° bend (x t)
3.00 - 10.00	420	480 - 620	16	20	0.0

The mechanical properties are tested in the longitudinal direction.

Bending properties for both longitudinal and transversal direction.

¹⁾ A₈₀ value applies for thicknesses < 3.00 mm.

²⁾ A₅ value applies for thicknesses ≥ 3.00 mm.

Impact Properties

Min. impact energy for longitudinal testing, Charpy V 10x10 mm test specimens

40 J / -60 °C

Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ 6mm. The specified minimum value corresponds to a full-size specimen.

Chemical Composition (ladle analysis)

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Al (min %)	Nb (max %)	V (max %)	Ti (max %)
0.10	0.03 ¹⁾	1.50	0.025	0.010	0.015	0.09 ²⁾	0.20 ²⁾	0.15 ²⁾

The steel is grain refined.

¹⁾ Meets the requirements of category A (thin coatings) for hot-dip zinc-coating in EN 10149-2.

²⁾ The sum of Nb, V and Ti is max 0.22%.

Carbon Equivalent

Thickness (mm)	3.00 - 10.00
Typical CEV (%)	0.25
Typical CET (%)	0.18

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

Tolerances

SSAB Domex is delivered with SSAB Domex tolerances, with improved guarantees compared to EN 10051. More details are available at SSAB.com

Thickness

SSAB Domex thickness tolerances correspond to 2/3 of EN 10051 as default value. After special agreement, tolerances down to 1/3 of EN 10051 can be delivered for certain products and dimensions.

Length and Width

SSAB Domex tolerances for width and length are according to SSAB standard and offer narrower width and length tolerances compared to EN 10051.

For coil and sheet with mill edge, the width tolerances are corresponding to -0/+20 mm.

For coil and sheet with cut edge, the width tolerances are corresponding to -0/+2 mm.

After special agreement, tighter tolerances can be delivered for certain products and dimensions. Length tolerances only apply for cut to length sheets.

Shape

SSAB Domex is delivered with shape tolerances according to EN 10051. Tighter tolerances are available on request.

Flatness

SSAB Domex tolerances guarantee a maximum flatness deviation of 3 mm/m in addition to the EN 10051 flatness requirements. Flatness guarantees only apply for cut to length sheets.

Surface Properties

According to EN 10163-2 Class A, Subclass 3.

Delivery Conditions

Thermomechanically rolled.

Surface and edge condition

SSAB Domex MC products are available with non-pickled or pickled surface with mill or cut edge.

Fabrication and Other Recommendations

SSAB Domex MC are cold forming steels not suited for heat treatments at temperatures above 580°C, since the material may then lose its guaranteed properties.

SSAB Domex is well suited for all common thermal and mechanical cutting processes. SSAB Domex offers good cold forming properties. Welding can be performed, using all common methods and consumables.

For information concerning fabrication, see SSAB's brochures on www.ssab.com or consult Tech Support.

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the products.

Contact Information

www.ssab.com/contact